IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) A method comprising:

forming an integrated circuit heat sink including:

forming a metal conductive structure having a cavity, the cavity including a cavity surface sloping upward from a low area located at a center of the cavity surface to a side wall, the cavity surface being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure being formed with an external surface configured to thermally couple to a surface of the integrated circuit;

injecting a mixture including a phase change material and a number of particles into the cavity; and

sealing the cavity.

2. (Previously Presented) The method of claim 1, wherein forming a metal conductive structure having a cavity comprises:

forming a metal conductive structure having a cavity including a cavity surface having a plurality of ramp structures formed on the cavity surface.

3. (Previously Presented) The method of claim 1, wherein injecting a mixture including a phase change material and a number of particles into the cavity comprises:

injecting TH58 into the cavity.

4. (Previously Presented) The method of claim 1, wherein injecting a mixture including a phase change material and a number of particles into the cavity comprises:

injecting a plurality of solid spheres into the cavity.

5. (Previously Presented) The method of claim 1, wherein sealing the cavity comprises: closing an injection hole in the metal conductive structure.

6-16. (Canceled)

17. (Currently Amended) A method comprising:
forming an integrated circuit heat sink including:
forming a metal conductive structure having a cavity and a plurality of fins on an outer surface of the metal conductive structure, the cavity including a cavity surface having a plurality of ramp structures formed on the cavity surface, the ramp structures being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure being formed with an external surface configured to thermally couple to a surface of the integrated circuit;
injecting a mixture including a phase change material and a number of particles into the cavity; and
sealing the cavity.

18. (Previously Presented) The method of claim 17, wherein forming a metal conductive structure having a cavity and a plurality of fins includes forming a substantially flat surface on the external surface of the metal conductive structure.

19. (Previously Presented) The method of claim 18, wherein forming a substantially flat surface on an external surface of the metal conductive structure includes forming the flat surface by machining.

20. (Previously Presented) The method of claim 18, wherein forming a substantially flat surface on an external surface of the metal conductive structure includes forming the flat surface

having a footprint that is significantly larger than the surface area of an integrated circuit die to which the metal conductive structure is to be attached.

21. (Currently Amended) A method comprising:

forming an integrated circuit heat sink including:

forming a metal conductive structure having a cavity and a plurality of fins on an outer surface of the metal conductive structure, the cavity being configured to enhance formation of convection currents within the cavity during operation of an integrated circuit, the metal conductive structure having a substantially flat external surface configured to thermally couple to a surface of the integrated circuit;

injecting a mixture including a phase change material and a number of particles into the cavity, wherein each of the particles in the number of particles has a density about equal to the density of the phase change material; and

sealing the cavity.

22. (Previously Presented) The method of claim 21, wherein injecting a mixture including a phase change material and a number of particles into the cavity includes intermixing a plurality of spheres into the phase change material including selecting a number of the plurality of spheres intermixed to be a large enough number to enhance convective cooling in the phase change material.

23. (Previously Presented) The method of claim 21, further including coupling the metal conductive structure to an integrated circuit die.

24. (Previously Presented) A method comprising:

forming an integrated circuit heat sink including:

forming a pair of symmetrical structures, each of the pair of symmetrical structures substantially identical to the other, each of the pair of symmetrical structures having a volume;

coupling the pair of symmetrical structures to form a cavity;

injecting a mixture including a phase change material and a number of particles into the cavity; and

sealing the cavity.

25. (Previously Presented) The method of claim 24, wherein forming a pair of symmetrical structures includes forming the volume of each of the pair of symmetrical structures to be approximately one-half of a volume of the cavity.

26. (Currently Amended) ~~The method of claim 24~~ A method comprising:

forming an integrated circuit heat sink including:

forming a pair of symmetrical structures, each of the pair of symmetrical structures substantially identical to the other, each of the pair of symmetrical structures having a volume, wherein forming a pair of symmetrical structures includes forming fins on an external surface of each of the pair of symmetrical structures;

coupling the pair of symmetrical structures to form a cavity;

injecting a mixture including a phase change material and a number of particles into the cavity; and

sealing the cavity.

27. (Previously Presented) The method of claim 26, wherein forming fins on an external surface of each of the pair of symmetrical structures includes attaching the fins using a metal fusing process.

28. (Previously Presented) The method of claim 1, wherein injecting a mixture including a phase change material and a number of particles into the cavity comprises:

injecting a plurality of hollow spheres into the cavity.

29. (Previously Presented) The method of claim 17, wherein each of the number of particles has an approximately spherical shape.

30. (Previously Presented) The method of claim 24, wherein each of the number of particles has an approximately spherical shape.